



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/804,809 | 03/19/2004 | Takaaki Tsukui | 14470.33US01 | 8895 |
| 23552 | 7590 | 06/08/2005 | EXAMINER | |
| MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903 | | | ALI, HYDER | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3747 | |

DATE MAILED: 06/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

SP

Office Action Summary

Application No.

10/804,809

Applicant(s)

TSUKUI ET AL.

Examiner

HYDER ALI

Art Unit

3747

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/22/05&9/13/04&3/19/04
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Inventorship

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-8 are rejected under 35 U.S.C. 102(b) as being anticipated by Morita (US 4,556,025).

As to **Claim 1**, Morita discloses a multi-cylinder engine comprising: an engine block (B) including an outer surface configured to engage a cam chain case (not

Art Unit: 3747

shown); at least two cylinder bores that partially define at least two combustion chambers (C) disposed within the engine block (B), the cylinder bores each including a first end and a second end; a cylinder head (H) mounted to the engine block (B) and disposed adjacent to the first end of said cylinder bore, and a plurality of engine valves (5,6) provided on the cylinder head (H), wherein at least one engine valve is constructed to be cut off from the combustion chambers.

As to **Claim 2**, Morita discloses the engine block (B) includes four cylinder bores (C) arranged in line.

As to **Claim 3**, Morita discloses the cylinder bores (C) at a first end are aligned with engine valves (5,6) that are constructed to be cut off from the combustion chamber.

As to **Claim 4**, Morita discloses a multi-cylinder engine comprising: an engine portion, wherein the engine portion includes a first end, a second end, a cam chain case (not shown) disposed adjacent to a first end of the engine portion; a working fluid port positioned at the second end of the engine portion, a plurality of engine cylinders (C) disposed between the cam chain case and the working fluid port, wherein each cylinder includes a plurality of valves (5,6); a plurality of working fluid channels connecting the working fluid port to the plurality of valves (5,6), wherein at least one valve (6) of the cylinder adjacent the cam chain case is in fluid isolation from the working fluid port.

As to **Claim 5**, Morita discloses the engine portion is an in-line cylinder engine.

As to **Claim 6**, Morita discloses the cylinder at the second end can be completely shut off while other cylinders continue to run whereas the cylinder at the first end cannot be shut off while any other cylinders continue to run.

As to **Claim 7**, Morita discloses a multi-cylinder engine comprising: an engine including a plurality of combustion chambers (C), wherein at least one combustion chamber can be completely shut off and one combustion chamber can be partially shut off, a shut off mechanism (20) disposed at a first end of the engine, wherein the combustion chamber that can be completely shut off is positioned between the shut off mechanism (20) and the combustion chamber that can be partially shut off.

As to **Claim 8**, Morita discloses the shut off mechanism (20) includes working fluid channels and working fluid ports.

2. Claims 1- 3,7 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujiyoshi (US 5,636,609).

As to **Claim 1**, Fujiyoshi discloses a multi-cylinder engine (E) comprising: an engine block including an outer surface configured to engage a cam chain case; at least two cylinder bores that partially define at least two combustion chambers (C1,C2,C3,C4) disposed within the engine block, the cylinder bores each including a first end and a second end; a cylinder head mounted to the engine block and disposed adjacent to the first end of said cylinder bore, and a plurality of engine valves (VE, VI) provided on the cylinder head, wherein at least one engine valve is constructed to be cut off from the combustion chambers.

As to **Claim 2**, Fujiyoshi discloses the engine block includes four cylinder bores (C1,C2,C3,C4) arranged in line.

As to **Claim 3**, Fujiyoshi discloses the cylinder bores at a first end are aligned with engine valves (VE,VI) that are constructed to be cut off from the combustion chamber.

As to **Claim 7**, Fujioshi discloses a multi-cylinder engine comprising: an engine including a plurality of combustion chambers (C1,C2,C3,C4), wherein at least one combustion chamber can be completely shut off and one combustion chamber can be partially shut off, a shut off mechanism (58₁, 58₂, 58₃, 58₄) disposed at a first end of the engine, wherein the combustion chamber that can be completely shut off is positioned between the shut off mechanism (20) and the combustion chamber that can be partially shut off.

As to **Claim 8**, Fujioshi discloses the shut off mechanism (58₁, 58₂, 58₃, 58₄) includes working fluid channels and working fluid ports.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 9-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morita (US 4,556,025) in view of Tsukui et al (US 6,318,316).

Morita discloses the limitation as sets forth in **claim 7**.

Morita does not disclose the engine includes four in-line combustion chambers each having at least four valves.

Tsukui et al discloses the engine includes four in-line combustion chambers (43) each having at least four valves (56,57).

It would have been obvious to a person having ordinary skill in the art to modify Morita by employing four valves per cylinder in order to provide an engine, which includes four in-line combustion chambers each having at least four valves.

As to **Claim 10**, Tsukui et al discloses at least four valves of the two combustion chambers nearest a working fluid port can be cut off.

As to **Claim 11**, Tsukui et al discloses at most half of the valves of the two combustion chambers furthest away from the working fluid ports can be cut off.

4. Claims 4-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujiyoshi (US 5,636,609) in view of Morita (US 4,556,025).

Fujiyoshi discloses a multi-cylinder engine comprising: an engine portion, wherein the engine portion includes a first end, a second end, wherein each cylinder includes a plurality of valves (VE,VI); a plurality of working fluid channels connecting the working fluid port to the plurality of valves (5,6), wherein at least one valve of the cylinder adjacent the cam chain case (not shown) is in fluid isolation from the working fluid port.

Fujiyoshi does not disclose a cam chain case disposed adjacent to a first end of the engine portion; a working fluid port positioned at the second end of the engine portion, a plurality of engine cylinders disposed between the cam chain case and the working fluid port. However, Morita discloses a cam chain case disposed adjacent to a first end of the engine portion; a working fluid port positioned at the second end of the engine portion, a

Art Unit: 3747

plurality of engine cylinders (C) disposed between the cam chain case and the working fluid port. It would have been obvious to a person having ordinary skill in the art to modify Fujiyoshi by employing a working fluid port positioned at the second end of the engine portion, a plurality of engine cylinders disposed between the cam chain case and the working fluid port **in order to** provide an engine, which includes plurality of engine cylinders disposed between the cam chain case and the working fluid port.

As to **Claim 5**, Fujiyoshi discloses the engine portion is an in-line cylinder engine.

As to **Claim 6**, Fujiyoshi discloses the cylinder at the second end can be completely shut off while other cylinders continue to run whereas the cylinder at the first end cannot be shut off while any other cylinders continue to run.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HYDER ALI whose telephone number is (571) 272-4836. The examiner can normally be reached on M-F (8:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, HENRY YUEN can be reached on (571) 272-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3747

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hyder Ah

ha

 6/3/05
MAHMOUD GIMIE
PRIMARY EXAMINER